NAVAL POSTGRADUATE SCHOOL

Monterey, California

THESIS

PERSONALITY TYPES AND AFFINITY FOR COMPUTERS

by

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March 1991

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REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION Naval Postgraduate School 6b. OFFICE SYMBOL *(If applicable)* 367	7a. NAME OF MONITORING ORGANIZATION Naval Postgraduate School
6c. ADDRESS (*City, State, and ZIP Code*) Monterey, CA 93943-5000	7b. ADDRESS (*City, State, and ZIP Code*) Monterey, CA 93943-5000
8a. NAME OF FUNDING/SPONSORING ORGANIZATION 8b. OFFICE SYMBOL *(If applicable)*	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (*City, State, and ZIP Code*)	10. SOURCE OF FUNDING NUMBERS Program Element No / Project No / Task No. / Work Unit Accession Number

11. TITLE *(Include Security Classification)*
PERSONALITY TYPES AND AFFINITY FOR COMPUTERS

12. PERSONAL AUTHOR(S) Smith, Jane H.

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT *(year, month, day)*	15. PAGE COUNT
Master's Thesis	From To	March 1991	55

16. SUPPLEMENTARY NOTATION
The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

17. COSATI CODES			18. SUBJECT TERMS *(continue on reverse if necessary and identify by block number)*
FIELD	GROUP	SUBGROUP	personality, computer affinity

19. ABSTRACT *(continue on reverse if necessary and identify by block number)*

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20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION	
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS REPORT ☐ DTIC USERS	Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL William J. Haga	22b. TELEPHONE *(Include Area code)* (408)646-3094	22c. OFFICE SYMBOL HG54

DD FORM 1473, 84 MAR 83 APR edition may be used until exhausted
All other editions are obsolete

Approved for public release; distribution is unlimited.

Personality Types and Affinity for Computers

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Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN INFORMATION SYSTEMS

from the

NAVAL POSTGRADUATE SCHOOL
March 1991

ABSTRACT

This study investigated whether personality differences, as measured by the Myers-Briggs Type Indicator, of 349 graduate school students were associated with computer affinity, an attraction to the study and use of computers. A computer affinity index was created to measure a student's degree of computer affinity. Analysis was performed to see if there were any significant differences on personality dimensions between the respondents, and to explore the relationship between these differences and computer affinity. The results revealed no significant differences between personality types and affinity for computers. The findings also revealed a common personality type for respondents who showed an interest in computers.

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I. INTRODUCTION

Is there some characteristic within a person that relates to their attraction to computers? Folklore holds that computer professionals were mystics that set them apart from other people. Indeed, some people just seem to have a natural affinity to understand and manipulate computers.

Differences in individual characteristics between information systems (IS) people and non-information systems (non-IS) people have been previously investigated by Couger and Zawacki (1980). They suggested that IS people are motivationally different from non-IS people. However, Ferratt and Short (1986) disputed Couger and Zawacki's conclusions. They concluded that both groups are motivationally the same, but IS people may behave differently because of characteristics within the person.

This study looks at a different individual characteristic to explain a person's attraction to computers. Specifically, this study examines how personality differences, as measured by the Myers-Briggs Type Indicator (MBTI), are associated with an affinity for computers. Identifying such differences would benefit both managers and teachers. A manager might be able to select and train individuals for computer related jobs who meet a certain personality profile. Teachers would be able to

design computer training classes to match students' personality profiles.

Prior research has examined the idea that people who show an interest in computing have a different personality profile than the general population. However computer affinity has not been extensively studied. This study extends prior research in two ways. First, it builds a method of determining computer affinity. Second, it attempts to relate personality type to this measure of computer affinity.

II. LITERATURE REVIEW

The interest of this study was the relationship between a person's psychological type and his or her interest in information technology, as indicated by a score for computer affinity. Some literature studies has examined personality differences. Other research in the literature has examined how to determine a person's level of interest in computers. Nowhere in the academic literature was the relationship between the psychological type and computer affinity examined.

A. PERSONALITY DIFFERENCES

The idea that computer folk are somehow different from other folk is not new (Lyons, 1985). Management Information Systems' (MIS) literature has described speculated on the existence of an undefinable aura that computer people appear to have.

> This mystique sets a person apart from others and is beyond definition by outsiders. Certain behavior patterns or mannerisms reflect the mental processes that qualify an individual for the rigorous challenges of the computer trade (Bush and Schkade 1985, 128).

Researchers attempting to quantify these differences have been drawn into studies that focused on differences in personalities or motivation.

1. Personality Differences

Many studies have looked at the idea that people who show an interest in computers have a different personality profile than the general population.

Four studies performed by Sitton and Chmelir (1984), Bush and Schkade (1985), Kaiser and Bostrom (1982) and Lyons (1985) have examined the personality profile of the information systems professional using the Myers-Briggs Type Indicator test.

Sitton and Chmelir (1984) tried to develop a stereotype for computer programmers. Their rationale was that a relationship existed between a profession's stereotype and a person's desire to enter that field. In essence a person may chose to enter a certain computer field partially based on how they feel they may fit a perceived stereotype. Sitton and Chmelir found that the most common personality type among computer programmers was ENTP (extroverted, intuitive, thinking and perceiving). Sitton and Chmelir's findings were challenged on the grounds of an inadequate sample size (27 programmers).

Bush and Schkade (1985) duplicated Sitton and Chmelir's research using a sample of 40 programmers and 18 systems personnel. They found, unlike Sitton and Chmelir, that the most common personality type among the computer professionals they tested was ISTJ (introversion, sensing, thinking and judging).

Using the Myers-Briggs Type Indicator, Kaiser and Bostrom (1982) examined whether systems analysts and user representatives on the same project teams had different personality types. They claimed that users and their systems counterparts have similar personality types. The prevailing personality orientation among both groups was STJ (sensing, thinking and judging).

However, Kaiser and Bostrom studied the user representatives on information systems project teams and not end users. They postulated that user representatives were chosen to complement the systems people. Thus their personality types would be more aligned with system personnel's personality types. They speculated that personality differences may still exist between end users and system analysts.

Lyons (1985) performed the most extensive research of the four studies. Using 1,229 computer professionals, he confirmed the findings of Bush and Schkade. The prevailing personality type was ISTJ (introversion, sensing, thinking and judging). An ISTJ was described as someone who immediately assumed responsibility, tended to be dependable, maintained a conservative outlook and avoided risks (Lyons 1985, 108).

Werth (1985) developed a personality profile of college computer science majors. The students were found to be more introverted (I), intuitive (N) and thinking (T) than

the population as a whole. They were found to be closer to the national norm on the judging (J) index.

2. **Motivation**

Couger and Zawacki (1980) suggested that computer professionals have a stronger growth need than people in other occupations. Strong growth need refers to the degree that individuals have a desire for personal growth and development. Computer professionals also had a lower need for social interaction (Couger and Zawacki 1982, 23).

Although Bartol and Martin (1982) suggest caution in accepting Couger and Zawacki's research, their review of the Management Information Systems' literature also suggested that computer professionals had lower social needs than non-computer professionals. Ergo computer personnel were more apt to work alone than in groups.

In two related articles stemming from the same research, Ferratt and Short (1986 and 1988) examined whether information systems (IS) people were different from non-IS people. In their 1986 study, they compared motivators of productive work behavior within each group. In their 1988 study, they examined the relationship between the environment established by managers and employee productivity. In both studies, Ferratt and Short concluded that no differences existed between IS and non-IS people. They speculated that any perceived differences may be the

result of behavior other than productive work behavior or in factors that influence behavior.

B. COMPUTER AFFINITY

The definition used by this study of computer affinity is an attraction to the study and use of computers and information technology. Some people show a natural attraction to computers. They learn programming languages, master application programs, and make a commitment by purchasing a home computer.

Measuring computer affinity has not been extensively researched. The literature tends to concentrate on coping with computer anxiety or studying computer attitudes (Faerstein 1986; Igbaria and Chakrabarti 1990; Heinssen, Glass and Knight 1987). Faerstein suggested that the way people approach the introduction of computers in the work place is based upon their personalities. The introduction of new technology may make some workers more anxious than others. (Faerstein 1986) Hatcher and Diebert (1987) suggested that testing an office staff prior to the introduction of a computer system would identify those individuals resistant to computers. Management could then tailor their implementation plan to meet the specific needs of the staff.

Studies by Heinssen, Glass and Knight (1987), Popovich, Hyde and Zakrajsek (1987), and Nickell and Pinto (1986)

studied computer attitudes to determine what role they play in influencing behavior. They developed scales to measure attitudes towards computers. The findings of these studies suggest that the more computer experience and training a person has the better their attitude toward computers.

Their findings were confirmed by Fann, Lynch and Murranka (1989), who found that students with more experience with microcomputers were more likely to have positive attitudes about computers than those students with less experience. Igbaria and Chakrabarti (1990) also suggested that computer knowledge and experience may reduce computer anxiety or fear.

Research by Dickerson and Gentry (1983) portrayed the person who is likely to embrace personal computers. Their conclusions were that adopters of personal computers mimic adopters of other new technologies: middle-aged (30 to 40 years old), higher incomes, more education, opinion leader, and an information seeker. They also proposed that a computer adopter is introverted, logical, quantitatively oriented and unsocial. Expressing this description as a Myers-Briggs psychological type, it would approximate an INTJ (introverted, intuitive, thinking and judging) person.

C. WHAT WAS FOUND

No studies were found in the literature on the relationship between personality type and computer affinity.

However the literature did support the idea of testing personality to determine differences between information systems and non-information systems people. Several personality types emerged from the literature; computer professionals tended to be ISTJ (introverted, sensing, thinking and judging) while interested users and computer science students tended to be INTJ (introverted, intuitive, thinking and judging).

Another finding from the review was that the more computer training and experience a person has, the more comfortable he or she is likely to be with computers and information technology. Thus a person who has taken the time to learn and use computers should have a better aptitude for computer technology than someone who has not.

D. THE GOAL

This study builds on previous research by examining both personality differences and attraction to computer technology. The aim of this study is to determine if personality differences, as measured by the Myers-Briggs Type Indicator (MBTI), are associated with computer affinity.

Subsidiary research questions are:

1. Of the 16 MBTI types, is there any type that is primarily associated with computer users?
2. Are there any differences according to Management Information Systems (MIS) or non-MIS students?

3. What are the best indicators of computer affinity?

4. Can a computer affinity scale be developed?

III. METHODOLOGY

A. SAMPLE

This study used a computer affinity questionnaire and the Myers-Briggs Type Indicator (Form G) to collect data from 349 graduate school students in public administration during 1988 and 1989.

They were classified into three groups: U.S. students majoring in management information science (MIS), non-MIS U.S. students majoring in administrative science (ADMIN) and non-U.S. students (INTL) majoring in administrative science. The latter were segmented to control for English skills in understanding the meaning of the questions on the Myers-Briggs form. The demographic characteristics of the various groups are shown in Table I.

Data were collected from MIS students during the first or second quarter of a six-quarter program. Data were collected from non-MIS students between the fourth and sixth quarters. Therefore, attitudes and affinities of MIS students were a priori and not the result of their exposure to an MIS curriculum.

TABLE I. SAMPLE CHARACTERISTICS

	ADMIN	MIS	INTL	TOTAL
Sample Size	171	133	45	349
Mean Age	32.9	32.8	32.4	32.8
Percent Women	15	14	0	12

B. INSTRUMENTATION

1. Computer Affinity Questionnaire

a. Questionnaire Construction

The questionnaire was developed to obtain data for this study. Since this was a previously unresearched area, the questionnaire was developed loosely from the literature. Since the literature showed that people who took time to learn computing all had a greater aptitude for computing, this became the basis for the questionnaire.

It was felt that someone who embraced computer technology and who owned a personal computer (PC) showed a greater affinity for computing than someone who did not own a computer. Additionally, someone who learned computer languages and basic application programs also showed more computer affinity than someone who did not possess these skills.

The first three items on the second page of the questionnaire (see Appendix A) presented fill-in-the-blank questions. Question 1 was asked to determine the number of personal computers the respondent owned and the specific brand name. Question 2 asked the respondent to assign a 1, 2, 3 or zero ranking to their use of basic PC application programs and to indicate the brand name of program they liked the most: word processor, spreadsheet, and database. Question 3 asked the respondent to name any programming languages in which they were able to write a simple program to calculate a payroll.

The last items on the questionnaire were nine questions that inquired of a respondent's ability to perform word processing, spreadsheet and database tasks. Respondents answered yes or no to their ability to perform three tasks in each area. The assumption behind the three items under each application, although untested, was that they were ordered in increasing difficulty. For example, the assumption was that creating a spreadsheet macro to insert boilerplate was easier than block moving a paragraph between documents.

Question 2, regarding ranking of personal computer programs was not evaluated in this study. It was felt that this was a personal preference and did not determine computer affinity. The other 11 questions were defined as determinants of computer affinity. Each question

was given equal weight in summing to a computer affinity independent. Other questions were demographic in nature: name, age, sex and curriculum.

The two page computer affinity questionnaire was provided to the students by instructors. It was administered and collected during a single classroom session. The students did not know why the data was being collected. The Myers-Briggs Type Indicator was administered on the first day of class.

b. Questionnaire Reliability and Validity

Since the purpose of this questionnaire was to measure computer affinity, the reliability and validity of the instrument should be indicated. Since this was an exploratory inquiry into a previously unresearched area no formal effort was made to establish the validity or reliability of the instrument.

2. MYERS-BRIGGS TYPE INDICATOR TEST

Although Carl Jung's published his theory of psychological types in Switzerland in 1921, it was two Americans, Katherine Briggs and Isabel Briggs Myers, who developed a test to put Jung's theory into practical use. The Myers-Briggs Type Indicator (MBTI), developed in the 1950's by Briggs and Myers, used Jungian theory about perception and judgement. They also expanded on Jung's theory by making the J-P dimension more explicit than Jung

had proposed. The MBTI furnishes a measure of the way that an individual pursues, grasps, and evaluates information. (Myers and McCaulley, 1985)

a. Overview of Jung's Theory of Psychological Types

Jung proposed four orthogonal personality dimensions that determine an individuals personality type. Each dimension has two dichotomous (polar) preferences with only the dominate preferences from each of the four dimensions are assigned to an individual (Willis 1984): extraversion (E) verses introversion (I); sensing (S) verses intuitive (I); thinking (T) verses feeling (F); and judging (J) verses perceiving (P).

These preferences help to explain a person's behavior and attitudes. Although people use all eight preferences, they have one preference in each dimension in which they feel more comfortable using than the other. Each preference or type is thought of as equal to one another. (Myers and McCaulley, 1985)

(1) Extroversion - Introversion. The choice between extroversion and introversion describes the way that people relate to the world. An extrovert is drawn to the outer world of people and things. Whereas an introvert is more drawn to the inner world of ideas and thoughts (Kaiser, 1982).

(2) Sensing - Intuition. The choice between sensing and intuition determines how a person takes in data. A sensing person relies on his five senses (seeing, hearing, tasting, smelling and touch) for drawing conclusions. He prefers facts and reports. An intuitive person relies more on his mental process and imagination than on data to form conclusions.

(3) Thinking - Feeling. The thinking and feeling dimension reflects a person's preference between contracting ways of judging. A thinking person makes decision in a logical and impersonal fashion. A feeling person makes decisions based on personal or social values. (Myers and McCaulley, 1985)

(4) Judging - Perceiving. The last dimension deals with a person's decision making style. A judging person evaluates situations and makes prompt decisions. A perceiving individual is more flexible and waits to gather more information before making a choice. Even then he may be uncomfortable with the decision (Willis 1984).

It is the combination of the four dominate personality preferences that produces one of sixteen psychological types. For convenience the personality type is expressed in a four letter code, such as ISTJ. Each type describes a unique group of traits and behavior trends

(Willis 1984). This is useful for explaining behavior in terms of generalized descriptions.

b. MBTI Reliability and Validity

The assessment of reliability of the MBTI is based mainly on a large body of findings from high school and college populations. Bozeman (1978) concluded from a review of previous studies that the reliability of the MBTI has shown itself to be satisfactory.

Although there appears to be some disagreement by researchers on the validity of the MBTI, correlational studies have indicated enough circumstantial evidence to suggest that the MBTI provides a valid indicator of Jungian theory (Willis 1984, 488).

C. CODING OF RESPONSES

1. Questionnaire Scoring

The goal of the affinity questionnaire was to determine a value for each respondent's computer affinity index. The value of responses for all questions were totaled. For example, a respondent knowing Fortran and Pascal was scored two for languages. Computer affinity was the sum of scores for the number of personal computers owned, number of computer languages known and the number of word processing, spreadsheet and database tasks the respondent could perform.

2. **MBTI Scoring**

The MBTI Form G was used to assess the personality types of the respondents. The MBTI offers two polar and discontinuous scale for each dimension, with the zero point as the dividing point where the direction changes. The MBTI questions forced the respondent to make a choice between the pole of the dimension at issue (Myers and McCaulley, 1982). Each respondent received a four-letter overall alphabetic MBTI code and a single numerical score for each of the four dimensions showing the strength of each preference (Kaiser, 1982). The ranges for the scales are:

Introversion	59	-----	0	-----	51	Extroversion
Intuition	51	-----	0	-----	67	Sensing
Feeling	39	-----	0	-----	65	Thinking (male)
Feeling	43	-----	0	-----	65	Thinking (female)
Perceiving	61	-----	0	-----	65	Judging

To convert these dichotomous preference scores into a continuous score for analysis purposes the I, N, F, P scores were all designated as negative numbers. This allowed the scores on each dimension to be treated as a single continuum.

For example, a preference score of E 3 is represented by a E/I continuous score of 3; a preference score of N 39 is represented by a S/N continuous score of -39; a preference score of T 19 is represented by a T/F continuous score of 19; and a preference score of P 5 is

represented by a J/P continuous score of -5 on the MBTI. This particular overall MBTI code is ENTP.

D. ANALYSIS STRATEGY

1. General Data Analysis

The following data were obtained for each respondent:

1. The personality type and the strength of each of the four dimensions.
2. A computer affinity score.
3. A score for each component in the computer affinity (e.g. computer ownership, programming language, word processing, spreadsheet and database skills).

MBTI scores, ownership data and language data were treated as interval data. Word processing, spreadsheet and database skills were treated as summed dichotomies. The sum of ownership, languages, and the computer skill were treated loosely as interval data.

2. Statistical Tests of the Hypothesis

Each respondent's MBTI and questionnaire were manually scored. The respondent's were classified into one of three groups (ADMIN, MIS, or INTL) based upon their curriculum. The scores were entered into a PC spreadsheet where before uploading to an IBM 370 mainframe for statistical analysis using SPSS-X (release 3.1).

Using SPSS-X, the primary procedure in the analysis was the zero-order Pearson product-moment correlation. This procedure indicated the degree to which a variation in one variable was related to variation in another and the strength of linear relationship between the two variables. A two-tailed test of the significance of each Pearson correlation was used to test the relationship between the four personality dimensions (E/I, S/N, T/F and J/P) and the affinity index.

In addition to the Pearson correlation, a two-tailed, one-way analysis of variance (ANOVA) test was performed on nonparametric variables. This procedure indicated whether differences between sample population means was due to chance. This procedure was used to test the variance between computer affinity and each of the four preference dimensions (E/I, S/N, T/F. J/P) and the personality type. ANOVA also was used to examine the differences between MBTI type and language, ownership of a personal computer, word processing skills, spreadsheet skills and database skills.

The mean and standard deviation were determined for all test variables (E/I, S/N, T/F, J/P, ownership of a personal computer, computer language knowledge, word processing, spreadsheet, database and computer affinity) and sex and age.

IV. FINDINGS

A. SURVEY POPULATION

Table II presents the means and standard deviations of the variables used in the study. The model psychological type for the ALL and MIS groups was ISTJ. The ADMIN groups showed a model psychological type of ESTJ. The MIS group was stronger on the I dimension than the ADMIN group was on the E dimension.

Other differences between the MIS and ADMIN group were noted in the computer ownership, programming language and computer affinity variables. A member of the MIS group was only slightly more likely to own a personal computer than an ADMIN group member. The biggest difference between the MIS and ADMIN groups occurred in the knowledge of programming languages and database skills. People entering the MIS curriculum were almost three times more apt to know a computer language and almost four times more likely to know database tasks than the ADMIN group. The MIS group was also two times more likely to use spreadsheets than the ADMIN group. Both groups demonstrated an equal knowledge of word processing skills, although the MIS group was slightly higher. These differences appeared despite the fact that the MIS curriculum had no formal training in PC application

TABLE II. DESCRIPTION OF SURVEY POPULATION

	ALL		MIS		ADMIN	
VARIABLE	MEAN	STD DEV	MEAN	STD DEV	MEAN	STD DEV
Age	32.8	3.8	32.8	3.8	32.9	3.6
Sex	1.1	0.3	1.1	0.3	1.1	0.4
E/I	-2.4	25.8	-8.8	24.4	2.6	26.5
S/N	9.1	28.6	8.8	29.6	8.4	30.0
T/F	25.4	20.9	26.8	20.7	24.9	22.
J/P	13.7	27.8	10.1	30.1	14.0	26
Ownership	0.7	0.5	0.9	0.4	0.7	0
Language	0.9	1.1	1.6	1.3	0.4	0.6
WP	1.7	1.1	2.0	1.0	1.5	1.0
SS	0.9	1.1	1.4	1.3	0.6	0.9
DB	1.3	1.4	2.1	1.4	0.9	1.3
Affinity	5.5	3.9	7.9	4.0	4.2	2.9

WP: word processing skills SS: spreadsheet skills DB: database skills

programs while the ADMIN curriculum did. The MIS group scored higher on the computer affinity score than the ADMIN group.

B. PERSONALITY PREFERENCES

As can be seen by Table III, almost two thirds of the MIS population were introverts. This compared to only about half of the ADMIN population. Although Myers and McCaulley do not make an estimate on the personality preference of U.S. college graduates, about 75% of the general population are extroverts (Myers and McCaulley 1985, 45).

TABLE III. PERSONALITY PREFERENCES

	ALL		MIS		ADMIN	
	NUMBER	%	NUMBER	%	NUMBER	%
Extroversion (E)	165	47.3	52	39.1	89	52.0
Introversion (I)	184	52.7	81	60.9	82	48.0
Sensing (S)	219	62.8	78	58.6	105	61.4
Intuitive (N)	130	37.2	55	41.4	66	38.6
Thinking (T)	307	88.0	118	88.7	146	85.4
Feeling (F)	42	12.0	15	11.3	25	14.6
Judging (J)	255	73.1	92	69.2	123	71.9
Perceiving (P)	94	26.9	41	30.8	48	28.1

Table III also shows that the MIS and ADMIN population only slightly preferred the S (sensing) preference. In the general population, over 75% prefer the S preference. However, Myers and McCaulley report that students in graduate programs tend to be slightly more intuitive. (Myers and McCaulley 1985)

Over 80% of both survey populations preferred the thinking preference. This is a high preference of thinking to feeling. In the general population, 60% of the men have a T preference and 60% of the women have a F preference (Myers and McCaulley 1985).

TABLE IV. DISTRIBUTION OF PERSONALITY TYPES

	ALL		MIS		ADMIN	
	NUMBER	%	NUMBER	%	NUMBER	%
ENFJ	3	0.9	0	0	3	1.8
ENFP	10	2.9	3	2.3	6	3.5
ENTJ	35	10.0	13	9.8	17	9.9
ENTP	24	6.9	10	7.5	14	8.2
ESFJ	5	1.4	1	0.8	4	2.3
ESFP	2	0.6	0	0	2	[illegible]
ESTJ	67	19.2	19	14.3	33	1[illegible]
ESTP	15	4.3	5	3.8	9	[illegible]
INFJ	5	1.4	3	2.3	2	[illegible]2
INFP	3	0.9	1	0.8	2	1.2
INTJ	32	9.2	17	12.8	12	7.0
INTP	21	6.0	8	6.0	11	6.4
ISFJ	14	4.0	6	4.5	7	4.1
ISFP	2	0.6	1	0.8	0	0
ISTJ	89	25.5	32	24.1	42	24.6
ISTP	22	6.3	14	10.5	7	4.1
Total	349		133		171	

Finally, Table III shows that approximately two thirds of both survey populations prefer judging to perceiving. This compares to 55% to 60% of the general population (Myers and McCaulley 1985).

C. PSYCHOLOGICAL TYPES

Table IV shows the personality types for the surveyed populations. The personality type with the highest occurrence in both MIS and ADMIN populations, over 24%, is ISTJ. This is the combination of introversion, sensing,

thinking and judging. This result is hardly surprising.Myers and McCaulley report that ISTJ is the predominate personality type among college graduates (Myers and McCaulley 1985, 46-48).

The next most frequently occurring types is ESTJ. This is a combination of extroversion, sensing, thinking and judging. The ADMIN population has a heavier ESTJ occurrence than the MIS population. This finding confirms Myers and McCaulley's research that ESTJ is the second highest occurring personality type among college graduates (Myers McCaulley 1985, 46-48).

The third most frequently occurring personality type for the MIS group is INTJ. This is the combination of introversion, intuitive, thinking and judging. According to Myers and McCaulley, this is the fourth most predominate personality type among college graduates. The ADMIN group's third place model MBTI type is the ENTJ. This is the combination of extroversion, intuitive, thinking and judging. Myers and McCaulley report that this personality type is the third highest among college graduates. The MIS and ADMIN groups appear to only differ in how they view the outer world.

TABLE V. CORRELATION OF AFFINITY VS. MBTI TYPE - ALL

Variable Name	Affinity	E/I	S/N	T/F	J/P
Affinity	1.0000				
E/I	-0.0889 p= .097	1.0000			
S/N	-0.0440 p= .412	-0.1735 p= .001*	1.0000		
T/F	0.1272 p= .017*	-0.0850 = .113	0.206? p= .00	1.0000	
J/P	-0.0063 p= .906	-0.0700 p= .192	0.391? p= .00?	0.2449 p= .000*	1.0000

* significant at 0.05 level

D. PEARSON PRODUCT-MOMENT CORRELATION

1. ALL Group

As indicated in Table V, a significant correlation exists between the T/F dimension and computer affinity. The direction indicates that thinking types have more affinity for computers than do feeling types. Also shown in Table V, is that the S/N dimension relates more to the other dimensions (E/I, T/F, J/P) than it does to affinity. The T/F dimension also shows a significant relationship to the J/P dimension.

2. MIS Group

Table VI shows no significant relationship between affinity and any of the personality types. Again the S/N dimension shows a significant relationship to t e T/F and

TABLE VI. CORRELATION OF AFFINITY VS. MBTI TYPE - MIS

Variable Name	Affinity	E/I	S/N	T/F	J/P
Affinity	1.0000				
E/I	-0.0509	1.0000			
	p= .560				
S/N	0.0132	-0.1685	1.0000		
	p= .880	p= .052			
T/F	0.1556	-0.1146	0.1813	1.0000	
	p= .074	p= .189	p= .037*		
J/P	0.0977	-0.0694	0.2808	0.2320	1.0000
	p= .263	p= .427	p= .001*	p= .007*	

* significant at 0.05 level

J/P dimensions. Although not significant at the 0.05 level, the S/N dimension approaches a significant correlation with the E/I dimension. The T/F dimension also shows a significant relationship to the J/P dimension.

3. ADMIN Group

Table VII shows no significant relationship between affinity and any of the personality types. Again the S/N dimension shows a significant relationship to the E/I, T/F and J/P dimensions. The T/F dimension also shows a significant relationship to the J/P dimension.

TABLE VII. CORRELATION OF AFFINITY VS. MBTI TYPE - ADMIN

Variable Name	Affinity	E/I	S/N	T/F	J/P
Affinity	1.0000				
E/I	0.0562	1.0000			
	p= .465				
S/N	-0.0812	-0.1910	1.0000		
	p= .291	p= .012*			
T/F	0.0534	-0.0944	0.2538	1.0000	
	p= .488	p= .220	p= .001*		
J/P	0.0361	-0.1220	0.5065	0.2557	1.0000
	p= .640	p= .112	p= .000*	p= .001*	

* significant at 0.05 level

E. ONE-WAY ANALYSIS OF VARIANCE

1. Testing The Null Hypothesis - ALL

Table VIII shows the results of the one-way analysis of variance testing with the ALL group. The null hypothesis states that there is no significant relationship between the personality type of a respondent and his or her puter affinity index. Looking at Table VIII, the F probability was calculated to be 0.5351. This exceeds the 0.05 significance level. Therefore the null hypothesis, of there no significant relationship between personality type and computer affinity, could not be rejected.

Computer affinity was also tested against each dimension in personality type. The null hypothesis that

TABLE VIII. ONE-WAY ANALYSIS OF VARIANCE - ALL

Between	Degrees of Freedom	Mean Squares	F Probability
Affinity & Type	16	20.2812	0.5351
Affinity & E/I	54	15.0997	0.5003
Affinity & S/N	57	12.3030	0.8729
Affinity & T/F	49	18.8186	0.1083
Affinity & J/P	58	19.1943	0.0686
Type & Language	6	32.9843	0.1671
Type & Ownership	3	13.2821	0.6097
Type & WP	3	15.7300	0.5396
Type & SS	3	79.7997	0.0112*
Type & DB	3	10.3428	0.7009

WP: word processing skills SS: spreadsheet skills DB: database skills
* significant at 0.05 level

computer affinity was not related to a personality dimension could not be rejected for each dimension (E/I, S/N, T/F and J/P). The F probability for computer affinity versus the J/P dimension has a weak relationship but it is not statistically significant.

Personality type was also tested against the components of the computer affinity index. The null

TABLE IX. ONE-WAY ANALYSIS OF VARIANCE - MIS

Between	Degrees of Freedom	Mean Squares	F Probability
Affinity & Type	16	24.1476	0.3153
Affinity & E/I	47	18.0188	0.2232
Affinity & S/N	50	15.0570	0.6422
Affinity & T/F	41	17.6143	0.2865
Affinity & J/P	47	12.9860	0.8763
Type & Language	6	24.2885	0.3389
Type & Ownership	3	38.6399	0.1417
Type & WP	3	13.2531	0.6055
Type & SS	3	32.0328	0.2122
Type & DB	3	9.4001	0.7280

WP: word processing skills SS: spreadsheet skills DB: database skills

hypothesis that personality type is not related to the knowledge of spreadsheet skills was rejected. Therefore the null hypothesis of a significant association was accepted. Tests of components of computer affinity (ownership, language, word processing skills and database skills) did not show any statistically significant association. Overall there was no association between personality type and

TABLE X. ONE-WAY ANALYSIS OF VARIANCE - ADMIN

Between	Degrees of Freedom	Mean Squares	F Probability
Affinity & Type	12	15.1211	0.7823
Affinity & E/I	51	8.2866	0.4893
Affinity & S/N	54	8.2359	0.5060
Affinity & T/F	43	8.9269	0.3288
Affinity & J/P	49	7.8901	0.6000
Type & Language	3	2.0744	0.9644
Type & Ownership	2	3.9489	0.8385
Type & WP	3	6.9641	0.8180
Type & SS	3	14.5730	0.5821
Type & DB	3	27.1913	0.3002

WP: word processing skills SS: spreadsheet skills DB: database skills

computer affinity for the population of MIS, non-MIS and INTL student taken together.

2. Testing The Null Hypothesis - MIS

Table IX details the results of the one-way analysis of variance testing with the MIS group. The null hypothesis that personality types are not related to computer affinity could not be rejected at the 0.05 significance level. The F

probability was calculated to be 0.3153. This exceeds the 0.05 significance level.Computer affinity was also tested against each of the four dimensions in personality type. The null hypothesis that computer affinity is not related to a personality dimension was rejected for each dimension (E/I, S/N, T/F and J/P).

Personality type was also tested against the components of the computer affinity index. No statistically significant associations were found. Personality type had no association with computer affinity for MIS students.

3. **Testing The Null Hypothesis - ADMIN**

Table X details the results of the one-way analysis of variance testing with the ADMIN group. The null hypothesis that computer affinity is not related to personality type could not be rejected at the 0.05 significance level. The F probability was calculated to be 0.7823. This exceeds the 0 05 significance level. Computer affinity was not related to personality type Among non-MIS students.

Computer affinity was also tested against each dimension in personality type. The null hypothesis that computer affinity is not related to a personality dimension could not be rejected for any dimension (E/I, S/N, T/F and J/P).

Personality type was also tested against the components of computer affinity. The null hypothesis that personality type is not related to a dimension of computer affinity could not be rejected for any component (computer ownership, programming language, word processing skills, spreadsheet skills and database skills).

V. ANALYSIS AND CONCLUSIONS

A. DISCUSSION OF FINDINGS

1. What Does It Mean

The results from the hypothesis testing failed to show any significant differences. That is, no significant relationship was found between personality type and computer affinity. People who have shown an affinity for computing are not different from people who have not.

2. Comparison Of Findings With The Literature

Although no specific study in the literature duplicates this study, portions of a number of studies and methods can be compared.

This study investigated the personality characteristics of respondents who were scored for their affinity for computers. The idea of trying to determine a personality type to fit people who have an interest in computing has been examined in studies by Calaway (1982), Kaiser and Bostrom (1982), Bozeman (1978), Lyons (1985), Sitton and Chmelir (1984), and Bush and Schkade (1985).

The dominant personality type for computer professionals supported by the literature was ISTJ. Myers and McCaulley also report that ISTJ is the predominate personality type for college graduates (Myers and McCaulley

1985, 46-48). This study confirmed those findings. The predominate personality type for the MIS population was over 24% ISTJ. However, the ADMIN group also showed ISTJ as the predominate personality type. The Kaiser and Bostrom (1982) study, which investigated the personality type differences between users and system personnel on project teams, concluded that the users had similar personality types to their system counterparts. Applying their research to this study explains why the MIS and ADMIN group have similar personality types.

Another factor to consider is that this sample was not necessarily representative of the U.S. population. All the students tested were military officers. The profile of an ISTJ resembles those traits admired in military service; duty, honor and dependability (Keirsey and Bates 1978, 190). It may be possible that only certain types of individuals are attracted to the military and the sample does not represent a true picture of the population. More research would be needed to substantiate this conjecture.

The results of the computer affinity questionnaire were as expected. The MIS group showed higher mean scores on all determinates of computer affinity than the ADMIN group. Although no particular study examined the question of computer affinity, one can draw conclusions from the literature.

Dickerson and Gentry's (1983 study of home computer adopters concludes that adopters hac more experience with a variety of computer related technical products and services. In the case of computer affinity, the questionnaire addressed the respondent's experience with computer related tasks and knowledge. As expected, the respondents who had more experience with computers were also more likely to adopt a home computer.

The findings of no significan elationship between personality type and computer affinity as unexpected. The results indicate that the personality types of both groups, MIS and ADMIN, showed no relationship to computer affinity scores.

The results of this study question why the MIS literature abounds with conjecture about the differences between those individual who have an affinity for and those who do not have an affinity for computing. C possible explanation of the results could be that the TI is not a valid measurement of personality type. However, based upon the amount of supporting research for the MBTI, this explanation does not appear feasible.

Another explanation of the results could be that the questionnaire used here does not measure affinity. Subsequent research is needed in proving the validity of the questionnaire.

Another explanation of the findings is that computer affinity simply has no relationship to personality type. The literature has no support for this conjecture. It could be possible that as people are becoming accustomed to personal computers, feelings of awe may no longer exist (Gardner, Young and Ruth 1989). Thus, people of all personality types are turning toward computers as a part of their every day life.

B. ACCOMPLISHMENTS OF THE STUDY

This study attempted to explain differences in individual characteristics between those people who have and do not have an attraction for computers. It expanded previous research by investigating both personality differences and attraction to computer technology.

This study used of Jungian theory of personality types to identify differences between individuals. The study also provided support for the computer professional's personality type, ISTJ, reported in previous research.

The methodology of this study offers a chance to examine and expand on previous research. The study used a different survey instrument that distinguishes the people who have little or no interest in computer technology.

C. DIRECTIONS FOR FURTHER RESEARCH

The idea that computer people are different than the normal population has existed since the advent of the computer age. Future research into these differences could expand on this study in several ways. First, the questionnaire needs to be validated and tested for its reliability. Since this was an exploratory inquiry, no reliability or validation tests were performed. Second, the sample should be expanded to include groups other than the military.

APPENDIX A: COMPUTER AFFINITY QUESTIONNAIRE

PERSONAL BACKGROUND

Name: _____ Rank: _____

SSN: _____ SMC: _____

Curriculum number: _____ Curriculum Name: _____

Job Specialty: _____

Years of active duty: _____ Home phone (optional) _____

Last billet before NPS: _____

Likely billet after NPS: _____

What computer/data processing/MIS related billet have you held?:

_____

Undergraduate major: _____

College: _____ Hometown: _____

Undergraduate courses related to this course:

Names of computer/data processing courses taken as an undergraduate:

_____ _____

_____ _____

Names of economics courses taken as an undergraduate:

_____ _____

_____ _____

Names of management principles courses taken as an undergraduate:

_____ _____

_____ _____

PERSONAL COMPUTING:

What make/model PC do you own?:

_____

Assign a 1, 2, 3 or zero RANKING to your use of the following PC programs (1=most use):

	Ranking:	Brand name of program you like most:
Word processor:	_____	_____
Spreadsheet:	_____	_____
Database:	_____	_____

Programming language(s) in which you could write a program to, say, calculate a payroll:

_____

A. In word processing, can you: (circle a NO or YES)

1. Create a macro to insert a paragraph of boilerplate text?	NO	YES
2. Reformat the same page of text for different uses?	NO	YES
3. Block move a peregraph from one document to another?	NO	YES

B. In a spreadsheet program, can you: (circle a NO or YES)

1. Write a macro to import data from another worksheet?	NO	YES
2. Create a look-up table for calculating income taxes?	NO	YES
3. Export a worksheet to a document in a word processor?	NO	YES

C. In a database program, can you: (circle NO or YES)

1. Create a data structure?	NO	YES
2. Modify a data structure?	NO	YES
3. Query a database?	NO	YES

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affinity for computers.